Electronic Supplementary Material (ESI) for RSC Advances

Supporting Information

Pre-perovskite nanofiber: a new direct-band gap semiconductor with green and near infrared photoluminescence

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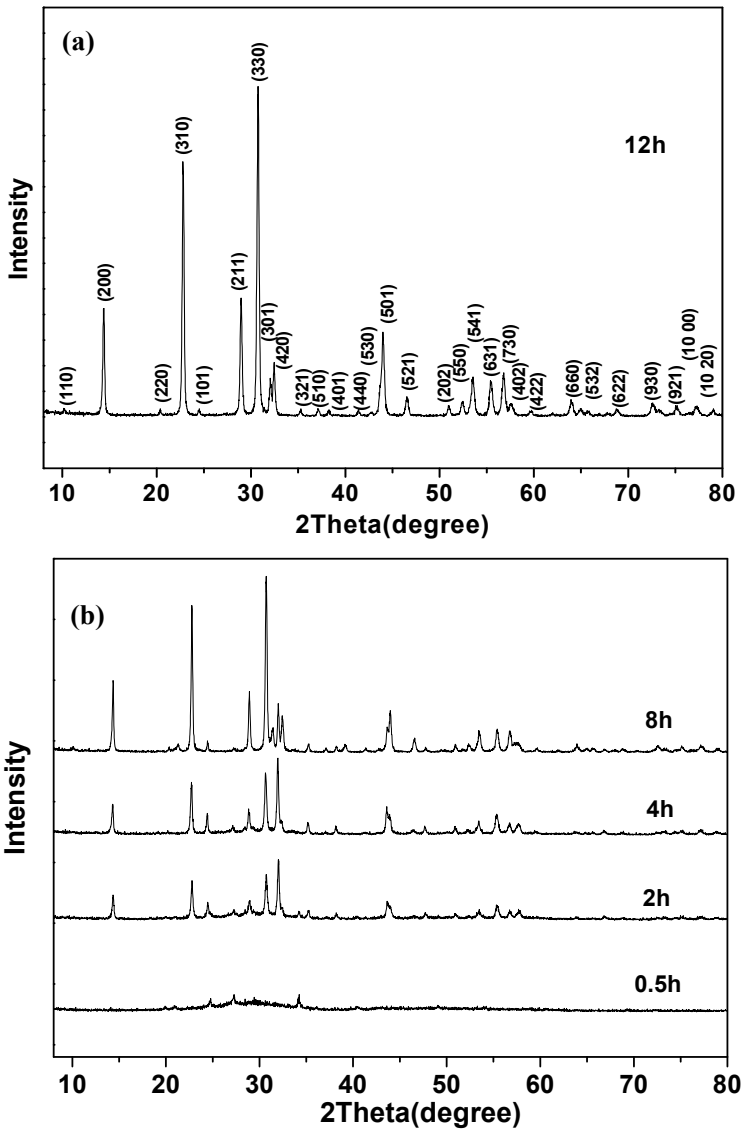

Figure S1. (a) Indexed XRD pattern of the PP-$PbTiO_3$ nanofibers hydrothermally prepared at 200^{o}C for 12h; (b) XRD patterns of the samples hydrothermally prepared at 200^{o}C for different reaction time. When the reaction time is 0.5h, the weak diffraction peaks of the samples are attributed to lead oxide and titanium dioxide, accompanied with strong amorphous diffraction background. As the reaction time grows from 2h and 8h, the crystallization of PP-$PbTiO_3$ was significantly improved.

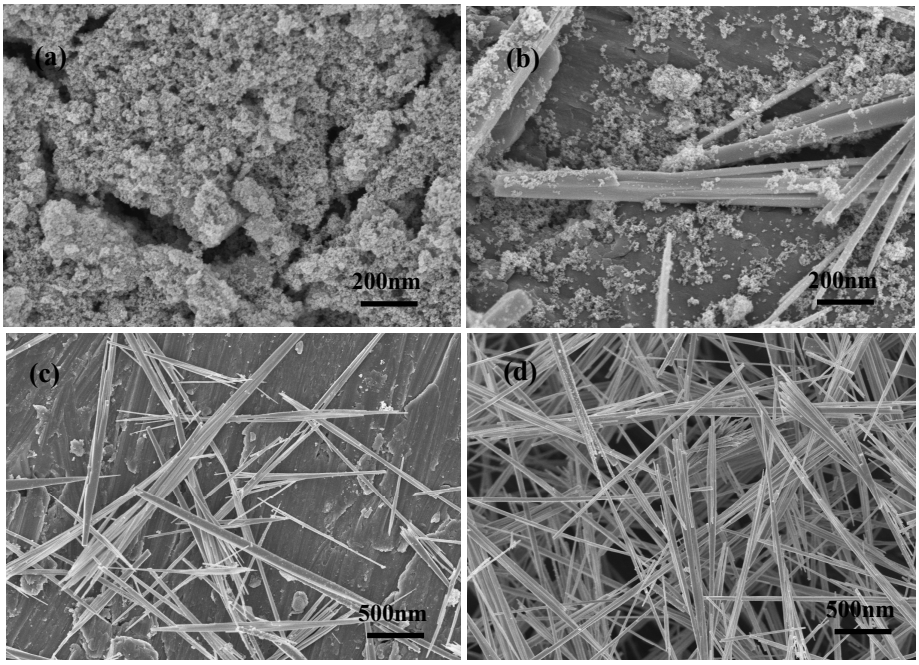

Figure S2. SEM images of the samples hydrothermally prepared at 200°C for different reaction time: (a) 0.5h; (b) 2h; (c) 4h and (d) 8h. When the reaction time is 0.5h, the sample is composed of particles with irregular morphology, corresponding to amorphous structure in Figure S1b. As the reaction time grows from 2h to 8h, the content of PP-$PbTiO_3$ nanofibers in the samples gradually increased and completely dominated in Figure S2d, where the irregular particles disappeared.